



STATE OF WASHINGTON

STATE BUILDING CODE COUNCIL

2015 Washington State Energy Code Development Energy Code Proposal Short Form

TAG Revision
5/13/22

For editorial **Coordination, Clarifications & Corrections** only,
without substantive energy or cost impacts

Log No. 082

Code being amended: ☐ Commercial Provisions ☒ Residential Provisions
(A MS Word version of the code is linked to the name)

Code Section # **R402.4, R402.4.1, R402.4.2, R402.4.3**

Brief Description:

This proposal reorganizes the requirements in the air leakage section of the code so the specific requirements for the different building types governed by the WSEC-R are easier to identify.

Proposed code change text: (Copy the existing text from the Integrated Draft, linked above, and then use underline for new text and ~~strikeout~~ for text to be deleted.)

R402.4 Air leakage. The building thermal envelope shall be constructed to limit air leakage in accordance with the requirements of Sections R402.4.1 through R402.4.6.

R402.4.1 Building thermal envelope air leakage. The *building thermal envelope* shall comply with Sections R402.4.1.1 through R402.4.1.3. The sealing methods between dissimilar materials shall allow for differential expansion and contraction.

R402.4.1.1 Installation. The components of the *building thermal envelope* as listed in Table R402.4.1.1 shall be installed in accordance with the manufacturer's instructions and the criteria listed in Table R402.4.1.1, as applicable to the method of construction. Where required by the *code official*, an *approved* third party shall inspect all components and verify compliance.

R402.4.1.2 Testing. The building or dwelling unit shall be tested for air leakage. ~~The maximum air leakage rate for any building or dwelling unit under any compliance path shall not exceed 5.0 air changes per hour. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals). For this test only, the volume of the home shall be the conditioned floor area in ft² (m²) multiplied by 8.5 feet (2.6 m). Where required by the *code official*, testing shall be conducted by an *approved* third party.~~ Testing shall be conducted in accordance with RESNET/ICC 380, ASTM E779 or ASTM E1827. Test pressure and leakage rate shall comply with Section R402.4.1.3. A written report of the test results ~~of the test~~ shall be signed by the party testing agency conducting the test and provided to the building owner and code official. Testing shall be performed at any time after creation of all penetrations of the *building thermal envelope*. Once visual inspection has confirmed air sealing ~~(see has been conducted in accordance with Table R402.4.1.1)~~, operable windows and doors manufactured by small business ~~shall be~~ are permitted to be sealed off at the frame prior to the test.

Exception: ~~For dwelling units that are accessed directly from the outdoors, other than detached one family dwellings and townhouses, an air leakage rate not exceeding 0.4 cfm per square foot of the dwelling unit enclosure area shall be an allowable alternative. Testing shall be conducted with a blower door at a pressure of 0.2 inches w.g. (50 Pascals) in accordance with RESNET/ICC 380, ASTM E779 or ASTM E1827. For the purpose of this test only, the enclosure area is to be calculated as the perimeter of~~

the dwelling unit, measured to the outside face of the exterior walls, and the centerline of party walls, times 8.5 feet, plus the ceiling and floor area. Doors and windows of adjacent dwelling units (including top and bottom units) shall be open to the outside during the test. This exception is not permitted for dwelling units that are accessed from corridors or other enclosed common areas.

During testing:

1. Exterior windows and doors, fireplace and stove doors shall be closed, but not sealed, beyond the intended weatherstripping or other infiltration control measures.
2. Dampers including exhaust, intake, makeup air, backdraft and flue dampers shall be closed, but not sealed beyond intended infiltration control measures.
3. Interior doors, if installed at the time of the test, shall be open, access hatches to conditioned crawl spaces and conditioned attics shall be open.
4. Exterior or interior terminations for continuous ventilation systems and heat recovery ventilators shall be sealed.
5. Heating and cooling systems, if installed at the time of the test, shall be turned off.
6. Supply and return registers, if installed at the time of the test, shall be fully open.

Exceptions: 1. Exception: Additions less than 500 square feet of conditioned floor area. 2. ~~Additions tested with the existing home having a combined maximum air leakage rate of 7 air changes per hour. To qualify for this exception, the date of construction of the existing house must be prior to the 2009 Washington State Energy Code.~~

R402.4.1.3 Leakage rate. ~~When complying with Section R401.2 Option 1, the building or dwelling unit shall have an air leakage rate not exceeding 3.0 air changes per hour when tested in accordance with Section R402.4.1.2. Detached one- and two-family dwellings and multiple single-family dwellings (townhouses) shall comply with Section R402.4.1.3.1. Group R-2 multifamily buildings where the dwelling units are accessed from an exterior corridor shall comply with Section R402.4.1.3.2. All other Group R-2 buildings shall comply with Section C402.5.3.~~

R402.4.1.3.1 Dwelling unit leakage rate. ~~The maximum air leakage rate for any dwelling unit under any compliance path shall not exceed 5.0 air changes per hour. When complying with Section R401.2 Option 1, the building or dwelling unit shall have an air leakage rate not exceeding 3.0 air changes per hour.~~ Testing shall be conducted with a blower door at a test pressure of 0.2 inches w.g. (50 Pascals). For this test only, the volume of the home shall be the conditioned floor area in ft² (m²) multiplied by 8.5 feet (2.6 m).

Exception: Additions tested with the existing home having a combined maximum air leakage rate of ~~5-7~~ air changes per hour. To qualify for this exception, the date of construction of the existing house must be prior to the 2009 Washington State Energy Code.

R402.4.1.3.2 Group R-2 multifamily building leakage rate. ~~For Group R-2 multifamily buildings where the dwelling units are accessed from an exterior corridor, the maximum leakage rate for any dwelling unit shall not exceed 0.4 cfm per square foot of the dwelling unit enclosure area. Testing shall be conducted with a blower door at a test pressure of 0.2 inches w.g. (50 Pascals). For this test only, the enclosure area is to be calculated as the perimeter of the dwelling unit, measured to the outside face of the exterior walls and the centerline of party walls, times 8.5 feet (2.6 m), plus the ceiling and floor area. Doors and windows of adjacent dwelling units (including top and bottom units) shall be open to the outside during the test.~~

~~**Exception:** Building complies with Section C402.5.2.~~

Purpose of code change:

Code language clarity. No increase in stringency.

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